MarCum TECHNOLOGIES

VS485C

Underwater Viewing System

User Manual

www.marcumtech.com

Table of Contents

Introduction 3
Features 3
Getting Started 5
Adjusting the Monitor Settings 6
Lighting 7
Ice Fishing Application 7
Open Water Application 8
Battery Charging 8
Product Performance Specifications 9
One Year Warranty 9
How to Obtain Service 9

Introduction

Thank you for your purchase of the VS485C, and welcome to the world of underwater viewing in full color! Your new VS485C can be used to hunt for underwater treasures, locate the “spot on the spot”, observe fish in their natural habitat, learn how to interpret signals on your sonar, and learn how fish react to your lure or bait presentation. Utilizing a color viewing system enables the user to see how fish, bait, lures and weeds really look. The applications are endless.

MarCum’s primary objective is to enhance the experience of the outdoor enthusiast and we’ve created a viewing system that is not only user friendly on the ice, but is easy to use in open water as well. You will now be able to stop guessing at what is below the surface and take all the mystery out of what is underwater. Have fun and good viewing!

Features

- 800v x 480h super-high resolution LCD monitor.
- SONY SUPER HAD II CCD color camera.
- Manta camera design utilizing Darkwater Technology lighting system.
- 50 feet of high strength camera cable.
- Removable down-view and trolling fin.
- Removable sun shroud.
- Front keypad control panel.
- On screen monitor adjustments.
- Video Output jack.
- 90° cable connections to prevent cable wear.
- Padded soft pack encompasses internal molded case that stores battery and Manta camera. This provides maximum portability and protection.
- 7.2 amp 12v rechargeable battery with charger.
- Full 1 Year Warranty.

The 800v x 480h high resolution LCD monitor on the VS485C viewing system provides for an extraordinarily sharp and clear picture under most viewing conditions. It’s recommended when viewing outdoors, that the backlight (brightness) be increased to enhance your viewing experience. Although classified as daylight viewable, it is recommended that you turn the monitor away from direct sunlight. When faced with very bright sun and/or dingy water, shrouding the monitor will improve the viewing experience. As indicated, the screen brightness can be adjusted to improve outside viewing but with direct light and monitor glare it can detract from the picture quality.

The VS485C series LCD systems are considered to be water resistant but not water proof. They're designed to be used in the outside elements under most conditions but under no circumstances should the monitor come in direct contact with standing water or be submerged. Also, be sure to fold down and cover the monitor should you experience heavy rain while out in a boat or on the ice. Should your VS485C viewing system become wet from rain or snow, be sure to get it to a warm dry place to dry out as soon as possible. You may experience some blurriness or slowdown in LCD performance when you first power up the screen in cold temperatures. It can take up to several minutes before the screen temperature reaches the appropriate operating range.

In order to create an ultra-clear, high resolution picture, there needs to be a matching high quality camera. The VS485C uses the best camera module available; the Sony Super HAD II ultra-low lux CCD. This camera offers a 90° angle of view, giving the user a wide coverage area for maximum visibility.

The Manta camera design matches the high quality Sony Super HAD CCD camera with adjustable high intensity white LED lights. This lighting option incorporates MarCum's exclusive Darkwater Lighting Technology. Darkwater technology greatly reduces particulate reflection and increases viewing distance by positioning the lights above and behind the actual camera lens. The digital keypad activates an onscreen display for making adjustments to the monitor brightness, contrast, color and sharpness. In addition to adjusting the monitor screen settings, the digital keypad also controls underwater lighting and power ON / OFF.

To clean the monitor screen, use a cleaner recommended for plastic and a soft cloth towel.

The video output jack located on the rear of the monitor allows for adding an external monitor such as a bigger screen TV or a video recording device. Be advised that the video signal coming out of the RCA jack is "analog", and that most recording devices are digital, so having a device that will convert the analog signal to digital may be necessary to successfully record what you see on your monitor.

The camera and power cables have been designed with 90° terminal connections to prevent cable wear. Along with the 90° connections, each cable connector is keyed differently to prevent plugging the cable into the wrong port. The rear cable access panel provides cable strain relief and is screwed to the back of the monitor. The panel securely holds the cables in place and prevents unnecessary wear.

The 50 feet of reinforced camera cable is flexible for ease of handling yet offers high tensile strength.

The Manta camera incorporates internal ballast weights within the camera housing. The amount of weight is ideal for use while stationary, but when using from a boat, mounting the supplied tail fin will keep the camera facing straight ahead. The fin may also be used for down viewing, simply mount the fin on the back of the camera housing and clip the cable into the special slot in the fin.

The VS485C is protected with a stylish reinforced padded soft pack case. Under the soft pack is a molded ABS hard case with a built in battery tray and a hook and loop strap to securely hold the battery in place. Next to the battery is a storage compartment for the camera and camera cable. The monitor folds down flat and the padded case encompasses the entire system protecting it during transportation. On the left side of the case is a carrying handle for ease of transport.

Getting Started

Remove the VS485C from the packaging and place it on a level surface with the MarCum Technologies logo facing towards you and right side up. Open the top cover of the soft pack by lifting up on the hook and loop closers on each side and front of the soft pack. Once opened, loosen the knobs on the either side of the gimbal bracket (at the base of the monitor) by turning each one counter-clockwise. Make sure to loosen the knobs a considerable distance. Then depress both knobs by pushing inwards and hold in place. This releases the lock on the monitor angle. While depressing the knobs with the base of your palms, use the index fingers of each hand and gently lift the monitor up to the desired viewing position and release tension on the gimbal knobs. Once you have set the monitor to the desired viewing angle, gently tighten the knobs until they are snug. The battery, camera and cable are now accessible behind the monitor. It's easiest to remove the hook and loop straps and unzip the soft pack case.

The depth of field (distance the camera can see underwater) depends on the clarity of the water and available light at the depth the camera is used. In clear water, the depth of field can be many feet but in cloudy or muddy water the depth of view can be reduced to only a few inches due to particles suspended in the water. Dirty or muddy water and/or low light penetration can detract from the quality of the picture. Optimum picture quality will result from clear water and adequate light penetration.

If your camera provides a great picture above the water, but the image on the screen disappears once the camera has been deployed, it is safe to say that the conditions on that particular body of water are not conducive to underwater viewing.

Adjusting the Monitor Settings

The VS485C monitor has four different adjustments that can be made to enhance the image on the monitor to the user's preference. (Note: The VS485C has been pre-set with factory defaults for normal viewing.) To access the settings menu, press the menu key on the digital keypad. The settings menu will be displayed on the screen (note: if you wait too long before selecting an adjustment, the menu screen will time out and disappear). To change between on-screen adjustment choices (brightness, contrast, color, and sharpness), continue to press the menu key. The selected on-screen adjustment will be highlighted on the LCD screen. To change the settings within a selected menu, use the UP and DOWN arrows located on the far right of the digital keypad. You will see the numbers of the selected adjustment increase or decrease depending on the arrow direction you are depressing. To accept the changes, release the UP / DOWN arrow and settings will be saved. Once the settings are adjusted properly, the on-screen menu will shut off automatically. Occasionally, you may find that one of your settings will not adjust. By simply scrolling through the menu options and coming back to the setting that wouldn't adjust a second time, you will automatically reset the internal timer, enabling that setting to be adjusted.

Contrast – Contrast is the difference in brightness between lightest and darkest tones in a picture. A picture with too much contrast has highlights (lighter tones) that are too bright and no detail and shadow areas that are too black. A picture with too little contrast looks dull, with no true blacks and more grayish highlights. Different water clarities coupled with the amount of light available will affect the contrast. Adjust the contrast to the desired setting for the best overall picture.

Brightness – Use the brightness adjustment to change the overall brightness of a picture. You can lighten a picture that's too dark, or darken one that's too light. Different lighting conditions and water clarity will affect the brightness of the picture. Increasing the brightness will make viewing the VS485C outdoors during daylight hours much easier.

Sharpness – Sharpness is the amount of high-frequency detail in the image. Adjust the sharpness according to personal preference. (Note: Increasing the contrast can give an impression of increased sharpness, so try this first).

Color – Increasing the color saturation will increase the vividness but can make the picture look darker overall. Decreasing the color saturation will make the colors look washed out and gray.

Color-Kill – This feature allows you to switch between color and black and white with the push of a button. For viewing in low-light, dirty water, or after dark, Black and White viewing is recommended for optimal viewing. Good water clarity and daylight viewing is optimal for viewing in color. NOTE: The Color-kill feature will turn on automatically when the camera's light sensor doesn't detect enough light for optimal color viewing. This can happen in low light conditions, in deep water, or when the ice is very thick and/or covered with snow.

Reset - This feature will reset your menu system to factory defaults.

Exit - This feature will exit you from the menu system.

Lighting

The VS485C utilizes super high intensity white LED lights. The VS485C incorporates Darkwater technology which greatly reduces particulate reflection and increases viewing distance by positioning the lights above and behind the actual camera lens.

To turn the lighting system ON, press the key titled LIGHTS, located on the digital keypad on the front of the monitor. By pressing the key, a small green LED light to the right of the button will be illuminated. This indicates that the high intensity white LED lights are ON. To turn the lighting system OFF, press the light button a second time. To increase the lighting intensity, press the UP arrow key on the right side of the digital keypad. There are 100 intensity level settings from low to high. To decrease the intensity of the lights while the lights are ON, press the down key on the right side of the digital keypad. The amount of LED light required will depend on the clarity and amount of particulates in the water. Darker, stained water will require more light while clear water will have sufficient light penetration therefore decreasing the need for LED intensity.

Ice Fishing Application

Watching fish react to your bait will keep you and your kids entertained for hours. The VS485C can be used to search for that perfect weed line or locate the crib or rock pile where fish will generally school. To use as a search tool, drill a series of holes through the ice in the location you're interested in fishing. The VS485C is small enough to hold in your arms while walking from hole to hole. Drop the camera down each hole in search for the best spot or until you locate fish. Once you've located the spot, drill a hole 3 or 4 feet away from the hole you're actually going to fish in. Set the VS485C on the ice and lower the camera down the second hole. To assist in keeping the camera at the desired depth and direction, it is recommended that a Camera Panner (purchased separately) be used. Once you send a lure or bait down and locate it with the VS485C, you're ready to fish. The depth and direction of the VS485C can be changed at any time by lowering or raising the camera and rotating the camera cable between your fingers [or by using a Marcum Camera Panner]. The VS485C also includes a down viewing fin that snaps into the back of the Manta camera. Once the fin is attached, the camera cable can be inserted through the cutout at the rear of the fin and locked into place. It is recommended that you leave about six inches of excess cable, forming a loop, before locking the cable into place. The camera can now be lowered into the hole to view what is directly below you. This can be very helpful while fishing in shallow water.

Open Water Application

To locate fish, look for treasure, or find that perfect spot, simply turn the camera power ON and drop the Manta camera into the water. If you're drifting with the wind or using a trolling motor with the VS485C, attach the supplied trolling fin to the rear of the Manta Camera for added stability. The internal weight is enough to keep the camera down while the fin assists in keeping the Manta camera tracking straight through the water. Proceed slowly and with caution in areas with a lot of underwater obstructions—if the camera becomes hung up, back up from the direction you were traveling from and slowly try to back the camera out of the snag. DO NOT pull directly upward with force unless all other avenues have been pursued.

Battery Charging

When properly cared for, a sealed lead acid battery will last for at least a couple of years. Batteries are made to be used, and they need to be used to make the most of them. The most important thing you can do is to promptly recharge your battery after each use. Not charging your battery immediately after use is the number one thing that leads to battery failure.

For safety reasons, it is recommended that you place your system on a flat, hard surface like cement or tile when charging it, away from any flammable materials. Be sure to disconnect the charger from the wall when not in use, and avoid leaving your battery hooked up to the charger for extended periods of time.

When you get home from a trip, put your battery on charge right away, and leave it there overnight, or for around 8-12 hours. Likewise, on the night before you go ice fishing, put it on the charger again, just to make sure. Again, there is no danger of overcharging your battery. We often talk to people who hesitate to charge their battery after each use for fear that the battery will develop a "memory" and this will lead to a shortened run time—THIS IS FALSE!!! ALWAYS CHARGE YOUR BATTERY AFTER EVERY USE!!! Be sure to use the
charger that came with your system, or a similar one that is between .5 amp and 1 amp. Using a larger charger, like you would use on a car, truck, RV, or boat is likely to cause damage to the battery.

To charge your battery:

To charge, simply couple the two ends of the charging system and connect the red and black wires to the battery. It is normal for a green light to appear on the charger when it is plugged into the battery only. It is also normal for the light on the charger to be green if it is just plugged into the wall. When it is plugged into the wall and battery, you will see a red LED light appear on the charger. If the light is red, the battery is being charged. When your battery is fully charged, this red light should change to green. If it is time to go fishing and the light has not turned green, go fish and try to allow a longer charging period next time.

The VS485C viewing system includes the Sun Shroud, which can be attached to the monitor to improve viewing while outdoors. The Sun Shroud comes with three hook and loop attachment strips that enable the owner to easily attach the shroud when conditions warrant its use, or remove it when not needed.

To install, first remove the loop tape from the hook tape. Peel the adhesive cover and apply the strips of loop tape to each side and the top of the monitor. The hook tape attached to the shroud can now be married to the loop tape on the monitor, and your monitor can now be more easily viewed in sunlight.

If your viewing image appears cloudy, fuzzy or the screen begins to shrink, check your battery charge. One of the major symptoms of a dead or near-dead battery is the degradation of your viewing image. Try charging your battery or if the battery is unable to hold a charge, replace it with a new one of similar specification. If you need to remove the battery, unplug the two battery terminals from the battery. Remove the hook and loop strap that is holding the battery in place and lift the battery out. To replace the battery, place a new battery into the battery compartment and secure it with the hook and loop strap and re-connect the positive and negative terminals.

Product Performance Specifications

Battery	12 volt DC, 7.2 Amp hr
Charger	12 volt DC
Camera Image Sensor	Sony SUPER HAD II CCD
Light Sensitivity	.01 lux with lights on
Field of View	90 degrees
Monitor	7" (800 x 480)
Current Draw	
System ON (lights off)	630mA
System ON (lights on - full)	815mA

One Year Warranty

Marcum warrants this product to be free from defects in materials and workmanship for one year from the date of purchase. This warranty applies to customers who properly complete the online product registration form found on the MarCum Technologies Website www.marcumtech.com/support
If you are unable to use the internet, please fill out and submit the enclosed warranty registration card to be eligible for the one year warranty. Marcum Technologies will repair or replace any components that fail in normal use. Failures due to abuse, misuse, unauthorized alteration, modification, or repair are not covered. The battery is not covered by the warranty. The warranty is valid only for the original owner who purchases the unit from an authorized dealer. An original sales receipt dated within the warranty period is required for all warranty claims.

HOW TO OBTAIN SERVICE

If your unit is malfunctioning, check the FAQ section of our website. You may find that the solution to your problem is something you can resolve yourself. If you need to send it in, there is no need to contact our office. Getting repairs made is as simple as going to our website, clicking on the service tab, and then filling out the Service Request Form. If your unit is under warranty, be sure to attach a picture/scan of your receipt showing the date of purchase. If your system is out of warranty, we have several flat-rate

fees that will cover the cost of repairs, including parts and labor. Once you have completed the Warranty or Flat-Rate repair, package the unit as described on the website and ship it to us.

There is no need for an authorization or reference number, just make sure that you have included your contact info and a brief description of the issue on a note in the box.

If you do not have the ability to use the Internet, you may also fill out the service request form included in the box with your unit. If you enclose this form in the box with your unit there is no need to contact our office, just include the filled out form in the shipping box.

Some people are more comfortable calling for shipping instructions. During peak ice season, we sometimes receive a high volume of calls, making it impossible to get to all customers who phone in. For this reason, strongly consider using the on-line form or email rather than calling. In your email, please provide your name, complete address, and cell phone #. Please indicate what model Marcum you have, approximate date of purchase, and what has gone wrong with it.

Please send your email inquiries to service@versae.com

If you are unable to use email or internet, you may also call us at **763-512-3987**. Our office hours are Monday – Friday, 8 – 4 Central Time. International callers may use **888-778-1208**.

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The customer is responsible for shipping costs associated with returning the unit to Marcum Technologies. Marcum will pay for shipping the repaired unit back to the customer while it is still under warranty. All out of warranty services will be charged a fee for service and shipping which must be paid in advance. The unit should be securely packed and shipped “pre-paid freight” and insured to Marcum Technologies. It is the customer’s full responsibility to track their products sent out in the mail or other forms of delivery service. Marcum Technologies will not be liable for packages lost en route to us. Unless specified otherwise, do not include batteries or other accessories when returning the product for repair. Marcum Technologies will not be responsible for lost or damaged accessories. Turnaround time can vary, on average it is about 1 week.

These are some other great systems from Marcum. These items can be purchased from one of our many fine retailers, or direct from us at marcumtech.com

Camera Panner This is a must-have for anyone using an underwater viewing system. The Camera Panner allows the user to maintain the camera at a desired depth and use the remote to "pan" right and left 360 degrees to view the entire area. The panner is powered by two "C" batteries.

LX-5 The LX-5 is the most advanced flasher style sonar on the market. The LX-5 incorporates the latest in sonar technology, featuring a patented flexible zoom that can be set anywhere between surface and bottom, a patent pending True-Color display, 2500 watts of peak-to-peak power, patented signal interference rejection, Superfine Line Technology, and target separation down to 3/4 inch.

LX-7 The LX-7 Digital Sonar takes DNA from other fine Marcum sonars –you might say it was "bred" for excellence. Because the LX-7 is digital, we can pack it full of more features than have ever been found in an ice sonar before. With an 8" customizable dashboard display, superior target separation, 12-level interference rejection, dual-beam transducer, expandable zoom, and much, much more, the LX-7 is the perfect combination of macro features and micro precision.

Showdown 5.6 The Showdown 5.6 Digital Fish Finder delivers unmatched system performance and offers the most intuitive and easy to use system on the market. You will now spend more time actually fishing, less time trying to figure out how to use and interpret what your sonar unit is showing you. The ShowDown's Auto Depth Range feature means there's no switching between various depth ranges. The Showdown 5.6 immediately locks on to the proper depth range, while also displaying digital depth at all times. Other standard features include Adjustable Zoom, Sensitivity, Range, and Noise Reduction.

Showdown Troller 2.0 The new Showdown Troller 2.0 Digital Fish Finder is a palm- sized sonar device with full size performance. For use in either ice-fishing or open water situations…quickly "troll" from hole to hole while ice-fishing or shoot through your canoe or kayak in order to find fish and the correct depth. The ultimate in portability is matched to ShowDown's proven Crystal-Quick® vertical display. The sonar instantly locks on to bottom, and clearly displays the location of fish and your lure, anywhere in the water column.

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MarCum User Manuals are available for download from www.marcumtech.com.